THE RARS -EXCITER-

RALEIGH AMATEUR RADIO SOCIETY
RARS
WORLDWIDE FRIENDSHIP

CLUB CALL: W4DW

REPEATER: W4DW/R 146.04/64

FEBRUARY, 1986

ISSUE 191

LEADING EDGE

SHERMAN STARNES
W4TZU

Preparations for the next amateur radio activity aboard the Space Shuttle are well under way. These activities have been given an acronym as is inevitable in the space business. The acronym is SAREX for Shuttle Amateur Radio Experiment. The WOORE flight was SAREX-1., SAREX-2 is to be the flight of Dr. Ron Parise, WA4SIR.

SAREX-2 is a packet radio experiment based on the TAPR TNC-2. One of the main concerns is the potentially excessive loading of the TNC since it will be exposed to hundreds, if not thousands, of ground stations when it is in orbit. In order to gain some insight into the capability of the space-borne packet station, the Central Iowa Technical Society is performing extensive ground-based and aeronautical mobile tests. The ground test consists of mustering as many packet operators as possible to coordinate their efforts and load the SAREX-2 TNC input. In an additional test the TNC will be carried aloft in a Cessna 182. At 10,000 feet the range will be about 275 miles. From that vantage point the TNC can be exposed to even larger numbers of packet operators over an area ranging from Chicago to Kansas City.

As in the past it is desirable to log all calls heard aboard the Shuttle and to that end a special logging mechanism has been developed for SAREX-2 and will be exercised in these tests.

As one might expect in an amateur radio organization, AMSAT, with roughly 6,000 members, is operated almost exclusively by volunteers. This fact was brought home to me recently when AMSAT announced the formation of four study committees to examine new amateur radio satellite concepts. One group will consider the technical feasibility of a new generation of spacecraft. Another will study the present requirements of the amateur radio community and attempt to estimate the future needs and consider how such needs might be met in some part with satellites. A third group will look at regulatory and legal aspects of amateur satellites. The fourth group will establish fund raising and resource development methods. These are weighty matters and require commitments that would be hard to come by from otherwise disinterested hired hands. If you look around you might find a speck of such stuff in RARS.

EDITOR: ANN M. BRADLEY, WA4APK - 5207 DENISE DRIVE - RALEIGH, NC 27606 - (919) 851-2437

MINUTES OF THE MEETING

The regular monthly meeting of the Raleigh Amateur Radio Society was held January 8, 1986, at the First Presbyterian Church, South Salisbury St. President Burce Eggers, WA9NEW, called the meeting to order and welcomed the 35 members and 10 guests.

Bruce reported several items of business from the Executive Board meeting held Dec. 18 including possible affiliation of RARS with the Boy Scouts of America and sponsorship of the Explorer Post Program. Anthony Gibbs from B.S.A. gave a brief summary of the program. Discussion followed and a motion was passed to support the program.

The possibility of changing the location of the Awards Banquet was discussed. Two alternative sites mentioned were K&W Cafeteria and Balentines.

Doc W4YZX needs volunteers to serve on the Awards Committee, and recomendations for awards would be appreciated.

Larry, N4MCC, reported on the upgrade classes that will be starting in Feb. at the McKimmon Center. So far only two people have signed up.

Bruce reminded the group of the membership application form included with last months Exciter is not intended for new members only. Please fill it out so a current data base of information can be formed.

Hamfest co-chairman Al, K4GOE, reported and invited the membership to attend the planning meetings.

Bruce reported the Wake Digital Communications Group will meet at the E.O.C. 7:30 pm Jan. 9. This meeting includes election of officers.

Chuck, K4HF made a few announcements: The next amateur exams in Raleigh will be on Feb. 15 on N.C.S.U. campus. Please funnel all inquiries pertaining to the Raleigh volunteer amateur exams to John Johnson, WM4P. The current meeting room for RARS will be demolished in the near future. The Feb. meeting will be in the basement of the main section of the church.

The club received in the mail: acknowledgment of membership in AMSAT, and appreciation of our clubs donation to the First Presbyterian Church.

The program for the evening, presented by Murray, W6MVZ, was a film about the Aurora Borealis called The Northern Lights.

After the film, several prize drawings were made. There being no further business, the meeting was adjourned.

Sue Meyer Parks
Secretary, RARS

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NEW ARRL MEMBERS ONLY may receive a $5 savings in ARRL membership by joining through RARS. Contact Treasurer, Norm Plaks, KN4G: 876-4192.

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TTNTT*
by wa9new

In December's Bert's Beat column, W4FMN correctly lamented the lack of basic math skills exhibited by many of our young people. In doing so, he reminded us that in general:

$$\frac{1}{X} + \frac{1}{Y} \neq \frac{1}{X+Y}.$$

True. But now, for you old-hand algebraic manipulators, the question is:

$$\text{CAN } \frac{1}{X} + \frac{1}{Y} = \frac{1}{X+Y} \text{ ?}$$

The answer is YES! How? See TTNTT next month for the solution. (Hint: Think ac!)

*Technical Topics for Non-Tech Types

'NEW LINE

by Bruce Eggers, WA9NEW
President, RARS

* * PRESIDENT SCREWS UP! * *

I can think of any number of newspapers in the country that would love to run that headline but I'm talking about me! In KN4G's absence at the January meeting, I tried to fill-in by accepting dues payments. Known cash transactions were with Finn, W3HXM; John, WB4WWT; and Rowlan, KB4QQJ; all new members and WELCOME! But I came away with more cash than I can account for. I gave receipts and was sure I had application forms for all but such is not the case. HELP! Who gave me money? (Line forms to the right, please.)

.-.-.

UPGRADE CLASS ON GO

N4MCC has all systems set for the Upgrade Class at the McKimmon Center starting Monday, February 3. Now, if we can just find some students! Spread the word. While not intended for the unlicensed Amateur-to-be, many such could benefit highly.

.-.-.

QST REACHES NEW HEIGHTS

As previously reported here, QST is now available on Piedmont Airlines! I personally verified this fact on a flight back from New England (whose football team will have suffered inglorious defeat by the time you read this) on Jan.1. TNX and a toot of the RARS whistle to Piedmont Prexy K3MBF. Hope it brings us lots of new hams.

.-.-.

AWARDS BANQUET COMING

Mark your calendar for the RARS Annual Awards Banquet, Wednesday, March 5. In lieu of instant coffee and listening to me beat my gums on old business while you beat yours on a glazed 'donut', spring for an extra five spot, payable in advance to KN4G, and join us for a good meal, some fine fellowship and say TNX to those who have served us well.

RARS TO SPONSOR EXPLORER POST!

As noted in minutes, the membership empowered a committee comprised of WA9NEW, N4MCC, K1PLR, K4MC, KB4OKB, WB4WWT, KA4NSA, N4IZE, WA4AOO and NF4P to commit RARS to the sponsorship of an Explorer Post if the committee felt the undertaking was feasible. This committee, sans N4MCC and with WA4APK pinch-hitting for WA4AOO, met with Anthony Gibbs, District Executive, BSA, at Wake Technical College Thursday evening, January 16. It took two an a half hours to get it all sorted out but the bottom line is the headline!

Given the requirement for the sponsoring organization to provide meeting facilities for the Post, the Committee accepted the offer of the Wake Technical College Amateur Radio Club, WB4TOP, to act as co-sponsor, at least until such time as the Post Advisory Committee deems it no longer necessary to continue the co-sponsorship arrangement.

Serving in key roles in this venture:
Advisory Committee Chairman: WB4WWT.
Advisory Committee Members: K1PLR, NF4P, WA4AOO, WA4APK, KN4G, N4IZE.
Post Advisor: KA4NSA
Associate Advisor: KB4OKB
Scouting Coordinator: WA9NEW

The involvement of the Wake Tech club in this venture had been coordinated with Wake Tech President Bruce Howell, WB4TOP Trustee and RARS member W4FMN, Wake Tech faculty member and RARS member KB4OKA, and student officers of the Wake Tech club. Primary responsibilities in this joint venture are for RARS to provide the adult leadership required and whatever funding assistance is recommended by the Advisory Committee and approved by RARS membership in accordance with the By-Laws, and for the Wake Tech club to provide facilities/programs as recommended by the Advisory Committee and can be provided by Wake Tech.

HAPPY VALENTINES DAY
FROM
THE NEWSLETTER STAFF

* * PACKET RACKET * *

de GUEST EDITOR, BOB AA4L

Is packet radio ready for appliance operators, and vice-versa? First of all, I understand that none of you readers fall in that category. This article is intended to prepare you to advise your acquaintances whose interests lie in the act of communication, rather than the means.

The heart and soul of the packet radio station is the **terminal node controller** (TNC). These are available in "plug part A into B and solder" kit form, and in built and tested form, from several suppliers. Prices are in the $200 - $300 range. Also needed is some type of terminal. Most packeteers use a home computer. Most any kind of computer which has a "serial communications port" will do. Some type of software to make the computer act like a communications terminal is needed. Any discount store can provide the computer and software. Prices range from $200 and provide your own TV set, to a few thousand bucks for a super duper IBM or compatible. There is packet activity on HF, but the beginner is well advised to start on VHF, if only to "get the feel" of the medium. Any two-meter FM rig will do, from a handheld on up. While any packet station can act as a digipeater, packet operation will be much more enjoyable if your station has enough antenna and enough power to contact other stations within a twenty to thirty mile range directly. Add to the shopping list a whole bunch of wire and a handful of assorted connectors, and the packet station is ready to be assembled.

As of this writing, there just is no way to go out and buy a ready to run packet appliance, plug it into the wall, screw in the antenna, and sit down at the keyboard. Selection and interconnection of the station components is up to the station chief engineer. Most of what you need to know to accomplish this is in the manuals supplied with the various equipment. As a matter of fact, the information is widely distributed between The TNC manual, the computer manual, the software manual, the radio manual, and three out-of-print issues of 73 Magazine. The TNC manual is as complete as it can be, but it can not possibly address every combination of radio, computer, and software. As a matter of designer's pride no two VHF radios use the same audio connectors and pinouts. Many "standard" computer communications ports ain't. Most terminal software authors never heard of packet radio. Decoding of cryptic references and translation of the different languages in which the manuals are written is a challenging exercise for the novice packeteer. There are all sorts of opportunities for subtle RFI problems and other interaction between electronic devices which were never designed to be interconnected.

Once the installation problems are resolved, how easy is it to operate the packet station? The **TAPR TNC-2**, a typical TNC, has some eighty- odd operator commands, many of which have more than two parameters. Some can be left at default values forever. Some have to be set up to match the characteristics of your station equipment, and then can be left alone. Some are set up to be compatible with other stations in the area. About ten commands are used in day-to-day operation. Incorrect command set-up can have major or minor impact, and the effects can be: nothing works, extra line feeds, garbage on the screen, or a delegation of local packet operators beating down your front door with axes. Fortunately, all the commands are explained to some degree of clarity in the TNC manual. Patience and clairvoyance on the part of the operator are appropriate.

From the foregoing, it may be seen that packet radio, at the present state of the art, is not quite the same sort of "turnkey" operation as putting a new Kamikaze Z950 on the air. However, plugging together a few black boxes really isn't all that hard, and anybody who can learn and remember forty-five Morse code characters can remember a few TNC commands. A bit of expert help at the start is all that's required.

One of the Purposes and Precepts set forth in the constitution of the **Wake Digital Communication Group** (WDCG) is technical support and assistance to the Amateur community. To that end, WDCG has a Beginner Help Committee, chaired by AB4S, and staffed by whomever he needs. WDCG members include communications professionals, programming professionals, computer professionals, experienced Radio Amateurs (and possibly one or two appliance operators). We have the skills to get any reasonable combination of apparatus working as a packet station, we can tell you about the local standards and practices, in some cases we can provide free software, we can show you how to operate the beast, and we are only a phone call away. We will help you at our QTH or yours, and one at a time or in groups. We are enthusiatic about packet radio, and we want others to share that enthusiasm. (We don't do windows or climb towers.)

Tell your appliance operator friend about us . . . and let us help him/her join the Packet Revolution!

UPGRADE UPDATE

WM4P and his trusty band of WAVE exam givers will be doing their thing Saturday, Feb. 15. Give John a call at 834-5001 or 834-5568. Next upgrade exams in Raleigh on April 13, the day of the 14th Annual RARS Hamfest. (You wouldn't want to miss part of the Hamfest/State Convention, would you?)

NEW MEMBERS OR OLD---If you have not filled out a new membership application, please do so. Applications are available at RARS Meetings. Updated applications will enable the Membership Committee to build a data base of member information---TNX.

RALEIGH AMATEUR RADIO SOCIETY, INC.
MEMBERSHIP ROSTER

JANUARY 1, 1986

President.....Bruce Eggers, WA9NEW
Secretary.....Sue Meyer Parks, WB4USX

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W4DW Trustee.....Lynn Pendleton, K4NYV

ALPHABETICAL LISTING BY LAST NAME

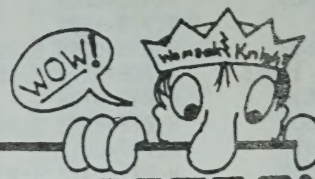
Alexander, Tom	WA4OTA	Feary, Ron	WB2KHQ	Peeler, Jim	WA4YOM
Anderson, Rolf	K8SL	Feehan, William	WB4EOV	Pendleton, Lynn	K4NYV
Arsenault, Harry	K1PLR	Forgeng, Joseph T.	KB4MEG	Peterson, John W.	KI4VZ
Arsenault, Pat	KA1JNW	Fried, John P.	W4WWD	Plaks, Alan	KA4NSA
Atherton, Ward S.	W4RVE	Gleason, Carla	KB4MDY	Plaks, Norman	KN4G
Auvray, Gerard	F6FAO	Gleason, Chuk	KB4NDZ	Porter, Clayton	KB4BWX
Babcock, James	K4ABJ	Goldberg, Eric	WD4LCL	Pullen, Howard B.	N4LFE
Bailey, Bert	W4FMN	Grahem, Tom L/M	WB4WII	Raiter, Terry	KB4HYF
Blackman, Corbett	KA4ZZO	Griffiths, Davie	WA2FLW	Ransom, Rollin M.	NF4P
Bliss, Peter	W8DTD	Hake, Murray	W6MVZ	Ratski, Chet, Jr.	KB4LAF
Boggs, J. Kenneth	KB4RV	Henderson, Joe	WD4MRD	Rice, Carl H.	K4IWX
Brack, Fred	N4ECU	Hilburn, Joe	K4UOO	Rogers, Annette	KB4AQH
Bradley, Ann M.	WA4APK	Hodges, Jesse L/M	W4JG	Rogers, Lee	WB4DRJ
Bradley, Jim E.	WA4AOO	Homovec, Joseph	WA4ENZ	Shaw, Morton R.	W4MJN
Bradley, J. W.	WA4AYW	Humphrey, David	KC4JW	Short, Walt	N4SW
Brame, Wallace	KI4BP	Ingraham, Robert	N4ILM	Silver, Marty	NY4H
Brandberg, William	W2BBN	Johnson, Bob	AA4L	Smith, Paul	N4LQR
Brookshire, Jack	AA4FT	Johnson, Earl		Smithson, Tom	N4KYT
Brower, Roger	N4KDD	Johnson, Jim	W4JUG	Sonnenberg, Henry	WA8BAL
Brown, Clay	WA4JNQ	Joyner, Dexter	KB4OKA	Starnes, Michael	WB4UYT
Browne, Alan	WA4AFB	Jurgens, Chuck	WAØCM	Starnes, Sherman	W4TZU
Browne, Audrey	WB4ZSM	Kenny, John J.	WB4MCU	Swain, John, Jr.	WD4ODT
Brunn, Robert T	SMØBRU	Laur, Steven A.	N4HKR	Swanson, Thomas	N4IZE
Bryant, Patrick	AKA4ZHK	Littlewood, Chuck	K4HF	Swindell, Charles	WB4DCM
Buehlmann, Tim	N4IQA	Luschene, Joseph	WD4LXR	Thacher. Coleman	W1HZQ
Callery, John	KA4ULW	Lyday, Russell		Thacher, Pete	N4HQZ
Caudill, Benny L.	N4AFO	Mangum, L. Scott		Thomson, Douglas	KB4OQO
Cobb, Grover C.	W4YZX	Mayfield, Johnnie	WA9SZL	Tissot, Raymond	W6SRF
Coleman, Bill	KA4DAP	McCume, Willard	W2IRC	Turner, Al	N4BYJ
Cook, Edward	KB4QIL	McDermott, Father	K4HJK	Tuttle, Dave	KB4OKB
Corns, Bob L/M	K4MC	Mercer, James E.	AA4DZ	Van Gibson, Walte	KB4LWD
Courtney, Dianne	WB4INM	Meyer, Stuart L/M	W2GHK	Vouin, Yves	F6CKW
Craig, Clifton M.	KD4ZE	Mishoe, David C.	KF4RD	Weaver, Jim	KA4YYZ
Craig, Ray	K4KXV	Moates, Roger	W3EZR	Weiss, Frank L/M	KY4W
Cranwell, Sally	KB4MEA	Mullis, Al	K4GOE	Weiss, James	KA4YNI
Cranwell, Pete	WA2EIN	Newcomer, Chris	AA4DV	Weiss, LaVerne	KA4ULZ
Dennison, Robert	KB4MRD	Newell, Larry	N4MCC	Weiss, Lawrence	KB4DLG
Dieter, Donn	K4GHJ	Nowakowski, Al	W4VP	Wicker, Phil L/M	W4ACY
Dillard, Wink	KC4PZ	Oates, Ron	AA4VK	Williams, Jack	KB4RW
Dubreck, Jim	N4BYO	Parker, Jeff	WA1WXL	Wisdom, Jim	K4HCG
Edwards, Billy	K4BWC	Parks, Sue Meyer	WB4USX	Workman, Robert	WA4ZZN
Eggers, Bruce L/M	WA9NEW	Pearson, Cecil	KA4JKA	Yakamavich, Vince	AA4MY

ALPHABETICAL LISTING BY CALL SIGN

K4ABJ	A	Babcock, James	611 Vick Avenue	Raleigh 27612	H:787-7816	
W4ACY	A	Wicker, Phil L/M	4821 Hilltop Dr.	Greensboro 27407	H:299-9187	
WA4AFB	G	Browne, Alan	2401 Guilford	Baltimore MD 21218		
N4AFO	A	Caudill, Benny L.	508 Emerson Dr.	Raleigh 27609	H:787-5936	B:836-5005
WA4AOO	E	Bradley, Jim E.	5207 Denise Dr.	Raleigh 27606	H:851-2437	B:831-3012
WA4APK	E	Bradley, Ann M.	5207 Denise Dr.	Raleigh 27606	H:851-2437	B:733-4893
KB4AQH	G	Rogers, Annette	5312 Kirkwood Ct.	Raleigh 27609	H:787-7486	
WA4AVW	A	Bradley, J. W.	3701 Cherryton Dr.	Chattanooga TN 37411	H:(615)629-6594	
WA8BAL	A	Sonnenberg, Henry	6201 Battleford Dr.	Raleigh 27612	H:781-3278	B:878-8100
W2BBN	G	Brandberg, William	714 Glascock St.	Raleigh 27604	H:833-9640	B:737-3661
KI4BP	A	Brame, Wallace	912 N. Blount St.	Raleigh 27604	H:828-5088	
SMØBRU	E	Brunn, Robert T.	414 Oakridge Rd.	Raleigh 27609	H:469-3347	
K4BWC	A	Edwards, Billy	4209 Live Oak Rd.	Raleigh 27604	H:832-5151	B:787-0363
KA4BWX	T	Porter, Clayton	623 Woodland Road	Raleigh 27603	H:772-5635	B:828-2581
N4BYJ	A	Turner, Al	1812 Lorimer Road	Raleigh 27606	H:851-2129	B:541-2939
N4BYO	G	Dubreck, Jim	1209 Shelley Rd..	Raleigh 27609	H:781-9437	B:876-8731
F6CKW	G	Vouin, Yves	5309 Country Ct.	Raleigh 27609	H:872-2341	B:829-5535
WAØCMO	A	Jurgens, Chuck	4708 Wildwood St.	Raleigh 27612	H:787-2020	B:544-3771
KA4DAP	T	Coleman, Bill	114 Circle Drive	Rocky Mount 27801	H:443-7870	B:442-8091
WB4DCM	A	Swindell, Charles	6805 Perkins Dr.	Raleigh 27612	H:848-0410	B:733-2032
KB4DLG	N	Weiss, Lawrence	17401 Spring Tree	Boca Raton FL 33431	H:(305)994-8017	
WB4DRJ	A	Rogers, Lee	5312 Kirkwood Ct.	Raleigh 27609	H:787-7486	B:543-5576
W8DTD	A	Bliss, Peter	8701 Kings Mill Pl.	Raleigh 27614	H:847-8704	B:872-4477
AA4DV	E	Newcomer, Chris	1411 Buckhorn Rd	Garner 27529	H:779-2949	
AA4DZ	E	Mercer, James E.	1301 Ingomar Pl.	Raleigh 27609	H:876-4450	
N4ECU	G	Brack, Fred	500 Emerywood Dr.	Raleigh 27609	H:847-7268	B:836-4901
WA2EIN	E	Cranwell, Pete	11212 Crestmont Dr.	Raleigh 27612	H:848-9136	
WA4ENZ	A	Homovec, Joseph	4135 Rockingham St.	Raleigh 27609	H:787-2150	B:872-3020
WB4EOV	G	Feehan, William	4412 Yadkin Drive	Raleigh 27609	H:781-6575	B:782-0183
W3EZR	E	Moates, Roger	3300 Barnsley Lane	Raleigh 27604	H:876-0691	B:834-5271
F6FAO		Auvray, Gerard	702 Sandy Ridge Rd.	Raleigh 27609	H:847-3782	B:833-7808
WA2FLW	T	Griffiths, Davie	7316 Fox Road	Raleigh 27604	H:872-6216	B:878-8100
W4FMN	E	Bailey, Bert	701 Currituck Road	Raleigh 27609	H:787-1643	B:772-0551
AA4FT	A	Brookshire, Jack	Rt. 2, Box 472	Lenoir 28545	H:(704)632-6303	
KN4G	E	Plaks, Norman	1205 Country Ridge	Raleigh 27609	H:876-4192	B:541-3084
K4GHJ	G	Dieter, Donn	4809 Radcliff Rd.	Raleigh 27609	H:782-5776	B:733-7018
W2GHK	E	Meyer, Stuart L/M	2417 Newton St.	Vienna VA 22180		
K4GOE	A	Mullis, Al	5304 Chamisal Pl.	Raleigh 27612	H:846-0757	B:543-4162
NY4H	E	Silver, Marty	3118 Eton Road	Raleigh 27608	H:787-9882	
K4HCG	G	Wisdom, Jim	3308 Cobblestone Ct.	Raleigh 27607	H:782-4098	B:782-4098
K4HF	E	Littlewood, Chuck	2005 Quail Ridge Rd.	Raleigh 27609	H:872-6555	B:829-3169
K4HJK	G	McDermott, Father	RFD 1, Box 50-D	Glasgow VA 24555		
N4HKR	T	Laur, Steven A	5705 Old Forge Cir.	Raleigh 27609	H:872-2694	B:836-6094
N4HQZ	A	Thacher, Pete	1108 Steinbeck Dr.	Raleigh 27609	H:876-4073	B:828-6260
KB4HYF	N	Raiter, Terry	3708 Oak Park Rd.	Raleigh 27512	H:782-1233	
W1HZQ	A	Thacher. Coleman	1324-K Steinbeck Dr.	Raleigh 27609	H:872-8968	
N4ILM	G	Ingraham, Robert	P.O. Box 31201	Raleigh 27622	H:848-1382	B:467-9063
WB4INM	A	Courtney, Dianne	RT. 2, Box 56-1	Apex 27502	H:362-7037	B:541-2370
N4IQA	T	Buehlmann, Tim	1314 Chaney Rd.	Raleigh 27606	H:851-7738	
W2IRC	G	McCume, Willard	5401 Oldtowne Rd.	Raleigh 27612	H:781-3190	
K4IWX	G	Rice, Carl H.	1807 Rankin St.	Raleigh 27604	H:834-5321	B:836-7673
N4IZE	G	Swanson, Thomas	5729 Wintergreen Dr.	Raleigh 27609	H:782-0791	B:872-8110
W4JG	A	Hodges, Jesse L/M	310 Pogue Street	Raleigh 27607	H:833-0229	
KA4JKA	T	Pearson, Cecil	Rt. 1, Box 236-I	Apex 27502	H:772-8330	B:779-0809
WA4JNQ	A	Brown, Clay	804 Buckle Court	Raleigh 27609	H:846-7499	B:549-4324
KA1JNW	N	Arsenault, Pat	704 Curtiss Drive	Garner 27529	H:779-5905	
W4JUG	A	Johnson, Jim	815 Coleman St.	Raleigh 27610	H:833-9189	

KC4JW	A	Humphrey, David	111 Neuse Dr. Rt. 1	Knightdale 27545	H:266-9276	B:543-6301
N4KDD	G	Brower, Roger	411 W. Morgan St.	Raleigh 27603	H:821-3991	B:821-3991
WB2KHQ	G	Feary, Ron	413 Amelia Ave.	Raleigh 27609	H:847-8327	B:847-8328
N4KXV	T	Craig, Ray	1305 Kintyre Cir.	Raleigh 27612	H:782-4274	B:543-9733
KYT	T	Smithson, Tom	3804 Camero Ct.	Raleigh 27604	H:876-3111	
AA4L	E	Johnson, Bob,	11305 Rums Hill	Raleigh 27614	H:847-5606	B:543-3837
KB4LAF	E	Ratski, Chet, Jr.	9600 Barton Creek	Raleigh 27614	H:847-1122	B:836-2551
WD4LCL	T	Goldberg, Eric	7901 Audubon Dr.	Raleigh 27609	H:847-1350	B:836-5611
N4LFE	T	Pullen, Howard B.	212 N. State St.	Raleigh 27601	H:834-9139	B:733-7701
N4LQR	T	Smith, Paul	Rt. 2, Box 144-D	Garner 27529	H:772-0960	B:833-7508
KB4LWD	N	Van Gibson, Walter	201 Walden Place	Raleigh 27609	H:782-1424	B:543-0843
WD4LXR	T	Luschene, Joseph	Rt. 2, Box 579C	Siera Vista, AZ 85635		
K4MC	E	Corns, Bob L/M	1619 Oblerlin Rd.	Raleigh 27608	H:828-6005	
N4MCC	T	Newell, Larry	5728 Carriagehouse	Apex 27502	H:779-1589	
WB4MCU	T	Kenny, John J	712 Pebblebrook Dr.	Raleigh 27609	H:876-0998	B:890-4410
KB4MDY	N	Gleason, Carla	215 Allison Dr.	Knightdale 27545	H:266-5273	B:553-5076
KB4MEA	N	Cranwell, Sally	11212 Crestmont Dr.	Raleigh 27612	H:848-9136	
KB4MEG	N	Forgeng, Joseph T.	3720 Marlin Court	Raleigh 27604	H:872-8853	B:847-3333
W4MJN	A	Shaw, Morton R.	5509 Lambshire	Raleigh 27612	H:787-0916	
KB4MRD	N	Dennison, Robert	7001B Woodbend Dr.	Raleigh 27609	H:847-0327	B:934-9711
WD4MRD	G	Henderson, Joe	2221 Coley Forest Pl	Raleigh 27607	H:787-6624	
W6MVZ	G	Hake, Murray	P.O. Box 12802	Raleigh 27605	H:872-0977	B:872-7076
AA4MY	E	Yakamavich, Vince	3405 Huntleigh Dr.	Raleigh 27604	H:872-3740	B:878-9510
KB4NDZ	N	Gleason, Chuk	215 Allison Dr.	Knightdale 27545	H:266-5273	B:834-5251
WA9NEW	A	Eggers, Bruce L/M	1141 N. Spr. Garden	Raleigh 27603	H:779-0266	
KA4NSA	N	Plaks, Alan	1205 Country Ridge	Raleigh 27609	H:876-4192	
K4NYV	E	Pendleton, Lynn	3617 Penny Court	Raleigh 27606	H:829-9449	B:836-6228
WD4ODT	A	Swain, John, Jr.	3420 Churchill Rd.	Raleigh 27607	H:787-5417	B:833-3826
KB4OKA	N	Joyner, Dexter	9801 Honeycutt Rd.	Raleigh 27614	H:847-1359	B:772-7500
KB4OKB	G	Tuttle, Dave	Box 2111 Corbett Rd.	Clayton 27520	H:553-5224	B:833-6417
KB4OQO	N	Thomson, Douglas	1109 Queensferry Rd.	Cary 27511	H:469-3380	B:469-9323
WA4OTA	A	Alexander, Tom	6800 Jean Drive	Raleigh 27612	H:848-0669	B:828-7026
NF4P	E	Ransom, Rollin M.	2447 Fairway Dr.	Raleigh 27603	H:779-5021	
K1PLR	A	Arsenault, Harry	704 Curtiss Drive	Garner 27529	H:779-5905	B:362-0842
KC4PZ	A	Dillard, Wink	11701 Strickland Rd.	Raleigh 27612	H:846-1946	
KB4QIL	G	Cook, Edward E	6416 Andsley Dr.	Raleigh 27609	H:878-5621	B:362-2615
KF4RD	E	Mishoe, David C.	2812 Providence Rd	Raleigh 27610	H:829-1716	B:779-1400
KB4RV	A	Boggs, J. Kenneth	4333 Pickwick Dr.	Raleigh 27612	H:787-1127	
W4RVE	A	Atherton, Ward S.	P.O. Box 2730	Ft. Pierce FL 33454	H:(305)461-5403	
KB4RW	A	Williams, Jack	1000 Winona Rd.	Raleigh 27609	H:872-7329	
K8SL	E	Anderson, Rolf	2836 Mattlyn Ct.	Raleigh 27612	H:848-4033	B:829-3077
W6SRF	G	Tissot, Raymond	4508 Embleton Dr.	Raleigh 27612	H:782-9681	
N4SW	E	Short, Walt	5515 Castlebrook Dr.	Raleigh 27604	H:876-1166	B:836-5355
WA9SZL	G	Mayfield, Johnnie	302 Poplar Box 1273	Wendell 27591	H:365-6291	B:553-4193
W4TZU	A	Starnes, Sherman	Rt. 1, Box 99	Franklinton 27525	H:494-5169	B:829-3363
KA4ULW	T	Callery, John	3621 Bond St.	Raleigh 27604	H:833-3447	
KA4ULZ	N	Weiss, LaVerne	17401 Spring Tree	Boca Raton FL 33431	H:(305)994-8017	
KA4UOO	G	Hilburn, Joe	3116 Arrowwood Dr.	Raleigh 27604	H:876-5269	B:543-8605
WB4USX	G	Parks, Sue Meyer	4648 Angier Ave.	Durham 27703		
WB4UYT	E	Starnes, Michael	Rt. 2, Box 279	Knightdale 27545	H:266-3567	B:878-9510
AA4VK	E	Oates, Ron,	9908 Waterview Rd.	Raleigh 27609	H:847-3279	B:836-6063
W4VP	E	Nowakowski, Al	4741-H Courtney Ln.	Raleigh 27604	H:872-8625	
KI4VZ	A	Peterson, John W.	813 Lynn Drive	Sanford 27330	H:776-0339	B:363-4800
KY4W	E	Weiss, Frank L/M	17401 Spring Tree	Boca Raton FL 33431	H:(305)994-8017	
WB4WII	G	Grahem, Tom L/M	Rt. 1 Vacation Vill.	Swansboro 28584	H:(919)326-3151	
W4WWD	A	Fried, John P.	102 Pebblebrook	Knightdale 27545	H:266-5135	B:828-6201
WA1WXL	T	Parker, Jeff	7901 Twin Oaks Ct.	Raleigh 27609	H:848-1208	B:787-9344
KA4YNI	N	Weiss, James	2206 Stafford	Raleigh 27609		
WA4YOM	A	Peeler, Jim	3513 Leonard St.	Raleigh 27607	H:787-6036	B:737-2256
KA4YYZ	N	Weaver, Jim	4301 Waterbury Rd.	Raleigh 27609	H:876-4148	

W4YZX	E	Cobb, Grover C.	6120 Winthrop Dr.	Raleigh 27612	H:787-5900	B:737-2512
KD4ZE	A	Craig, Clifton M.	5706 Deblyn Avenue	Raleigh 27612	H:787-6452	
KA4ZHK	T	Bryant, Patrick A.	P.O. Box 1203	Wake Forest 27587	H:556-3713	
WB4ZSM	G	Browne, Audrey	4419 Gates St.	Raleigh 27609	H:787-4299	
WA4ZZN	A	Workman, Robert	P.O. Box 612	Atlan. Bch 28512	H:(919)726-8828	
KA4ZZO	T	Blackman, Corbett	5705 Dean Avenue	Raleigh 27604	H:876-1793	B:834-5271
		Johnson, Earl	623 Lakestone Dr.	Raleigh 27609	H:787-3513	B:781-0056
		Lyday, Russell	3506 Keats Place	Raleigh 27609	H:787-4137	B:541-5962
		Mangum, L. Scott	4723 Heritage Dr.	Durham 27712	H:479-5591	B:541-7021



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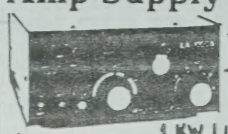

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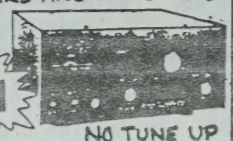

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This list is an update of all current RARS members through the end of 1985. Since renewals will be submitted for the next several months, no members have yet been deleted from the roster nor from the newsletter mailing list. Also no new 1986 members have been included on this listing. A revised 1986 Roster will be printed in the Exciter no later than the June issue. Editor would welcome comments on this roster format.

HAPPY NEW YEAR

Space limitations in The RARS Exciter being what they are, and the editorial autocracy invested in WA4APK being what it must be, it might be July before you see this column in print. But as I start the drafting process, all of the TV networks and stations, newspapers and news magazines are running highlights of 1985 and predictions for 1986. The 'NEW-LINE column must surely follow suit.

A review of the initial offerings in the 'NEW-LINE column from two years back reveals some objectives. Some have been met, some have not. Not too unusual. At the outset of my second 'watch at the helm', I thought it appropriate to reflect.

I remember reflecting on the cyclic nature of ham clubs as reflected by activity level and membership totals. Looks like RARS is on a roll. Membership has steadily increased, the hamfest has grown, class sponsorship has been two per year, this year's hamfest is again the host of the State ARRL Convention, WB4ZSM got RARS into the South Hills Mall, WA4YOM got RARS into the Scout-a-rama at Meridith, NF4P took the lead on the visit to Camp Easter, etc, etc.

It still takes a lot of people to make RARS run and there are a lot of 'the same old crowd' doing a lot of the work. I remember trying to make the point that a lot of effort behind the scenes goes on in RARS and trying to acknowledge the efforts of our 'unsung heroes'. But there are a lot of new faces in these areas too. A partial list of relative newcomers who are doing there share and more include N4MCC, WB4USX, WB4WWT, WA2EIN, KB4MEA, K1PLR, KB4MDY, KB4NDZ, W4VP, K4GOE, WA1WXL, and on and on. If you don't recognize those calls, how active are YOU?

And it's great to welcome back WB4MCU. Let's have a great '86.

'new

HAMFEST FUZZ

by Al Mullis, K4GOE

It's very gratifying to see the Hamfest finally taking shape. The meetings that we have had on the second Wednesday of each month have been well attended and productive. Both Jeff and I feel very good with where we are now as far as major tasks accomplished, but the real work is ahead of us.

At the next meeting we should have a copy of this year's flyer which was designed by Rollin NF4P, and be on the lookout for the two page ad in the next Repeater Journal that was the hard work of Dave KB4OKB. Our tickets are being printed probably as you read this article.

Jeff and I attended the Greensboro Hamfest and got a chance to talk with several vendors that were not at our hamfest last year, but had heard of it. That is most gratifying, as it seems our success of last year was well received. Jeff and Rollin went to the Richmond Frostfest and distributed flyers. The general felling there was that there is much interest in the RARS hamfest.

It appears that we should be gearing up for quite a lively and well attended event, and as I said the heavy work is still ahead. Therefore, we still will need all the help we can get, and will probably be passing around signup sheets at the upcoming meetings, so please help us assure this years hamfest is the best ever by volunteering your time.

****

Watch next month for BERT'S BEAT with an excellent write-up on Army MARS. Space limitations prevented inclusion in this issue.

A BEGINNERS GUIDE TO OSCAR-10 (Continued)

IV. A TYPICAL OSCAR-10 STATION

The format I am going to use as I describe a station is to follow the signal from the antenna to the receiver and back again. So here goes:

1. Antennas

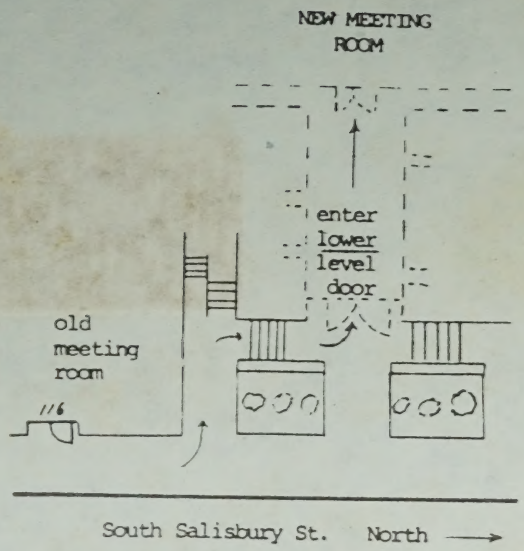
OSCAR-10 antennas will probably be different from any you've used before. If you try to use either a vertically or a horizontally polarized beam antenna (like the ones you may presently be using for 2 meter FM or SSB operation) you will find that the spinning spacecraft will impart a very objectionable "flutter" on the signals. You will hear some stations on the bird like this and realize how hard they are to copy. Instead, I strongly recommend that you use antennas capable of circular polarization. If you don't, you'll throw away hard earned transmitter and receiver performance. Right hand circular polarization (RHCP) is mandantory. The ability to switch to left hand circular polarization (LHCP) is nice but not necessary. Don't place the capability to remotely switch from LHCP to RHCP too high on your priority list.

A helix wound like a normal right-handed screw automatically produces right hand circular polarization. A pair of crossed Yagis on a common axis will do the same when the RF to them is phased properly. Additionally, every major manufacturer of VHF/UHF antennas have switchable RHCP/LHCP antennas available for 2 meters and 70 cm (see the table at the end of this section). Refer to the ARRL Antenna Book for some homebrew ideas about crossed yagis. Avoid excessively long Yagis, as they will prove difficult to handle and probably are not worth the extra decibel or two of gain. For 2 meters, a crossed Yagi with 6 to 8 elements in each plane is adequate. At 70 cm, 8 or 9 elements in each plane is about right for the gain you'll need. The helix is an excellent choice, is very easy to "homebrew", and is now beginning to appear on the commercial market. Note that the polarization of a helix is not switchable. To change the polarization you must wind it in the opposite direction. Dozens of articles have been published on suitable OSCAR-10 antennas. One of the best of these is by Byron Lindsey, W1BIW, in the July, 1984 edition of CQ Magazine. They are fun and easy to build.

The 1985 ARRL Handbook has an excellent discussion of "circular polarization" and other related topics in Chapter 23 "Space Communications". Also in the Appendices to this booklet is the two part article from "ORBIT" Magazine entitled "A Survey of OSCAR-10 Station Equipment". This is one fantastic article; typical of what is published by AMSAT. It is the best, most complete summary of OSCAR-10 equipment available. Please read it carefully as its comments on antennas are excellent. Be aware that since these articles were published many new products have appeared on the market: so use this article as a guide and check in the Ham magazines for new gear.

RARS NEW LOCATION

RARS is moving again--not changing the addres, just the room. We'll still be at the First Presbyterian Church at 116 S.Salisbury Street. The church has other plans for our current meeting space so they have given us a room in the basement of the main building. Chuck, K4HF, has provided us with a drawing of the new location and there will be signs and folks about to direct you. Come check it out and enjoy the February program on Amatuer Radio Astronomy. Guest speaker will be Mr. Jim Carroll, N4CAE, Technical Director of the Society for Amatuer Radio Astronomy (SARA). Jim is a graduate of NCSU and employed by ITT Telecom.. He was first licensed in 1951 and is a life member of ARRL and AMSAT.



ANTENNA COMPARISON TABLE

MANUFACTURER	MODEL NUMBER	DESIGN FREQ. (MHz)	ADVERTISED GAIN	POLARIZATION	TOTAL NO. OF ELEMENTS	LENGTH (Feet)	ADVERTISED COST
KLM	2M-14C	144-150	11 dBd	Note 1	14	12.7	$ 90.00
KLM	435-18C	420-450	12 dBd	Note 1	18	7.3	$120.00
KLM	2M-22C	144-150	12.5dBd	Note 1	22	19.1	$120.00
KLM	435-40CX	420-440	15.2dBd	Note 1	40	14.6	$170.00
Cushcraft	A-14420T	145.9	12.2 dBd	Note 2	20	11.0	$ 75.00
Cushcraft	416-TB	435	12.5 dBd	Note 2	16	7.5	$ 60.00
MET	144/6X	145.9	10.2 dBd	Note 2	12	8.3	$ 85.00
MET	432/17X	432-436	13.4 dBd	Note 2	34	7.3	$100.00

NOTE 1: Polarization is remotely switchable for either Right Hand Circularly Polarized or Left Hand Circularly Polarized.

NOTE 2: Is either Right Hand or Left Hand Circularly Polarized. Polarization is not remotely switchable.

(For MET antennas contact Don, WB4BWS @ Skylane Products, (305)773-1342)

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FEB. 15

RARS meets each first Wednesday at 7:30 at First Presbyterian Church, 116 S. Salisbury Street

Calendar

Feb 1, 2 - NC QSO Party 80-15 Mtrs.

Feb 5 - Regular RARS Meeting
Note: Different Meeting Room

Feb 8 - YL-OM Contest - Phone

Feb. 10 - RARS Exciter Copy Deadline

Feb 12 - RARS Hamfest Comm. Meeting
So. Rwy. Bldg, Carson Street

Feb. 15 - Amateur Exams, Raleigh, NC

Feb 15, 16 - ARRL Int'l DX Contest-CW

Feb 16 - Elkin, NC Hamfest

Feb 19 - RARS Advisory Board Meeting
7:30 pm, NCSU Faculty Club

Feb 21-23 - CQWW 160 Mtr. Contest, Ph

Mar 5 - RARS Annual Awards Banquet

Mar 22, 23 - Charlotte, NC Hamfest